

### ***SUMMARY DATA FOR CASE 7A***

This section contains the following economic data for case 7A:

- Capital Investment and Revenue Requirement Summary
- Total Plant Cost

**CAPITAL INVESTMENT & REVENUE REQUIREMENT SUMMARY****TITLE/DEFINITION**

Case:	Super-Critical PC w/ CO <sub>2</sub>		
Plant Size:	329.3 (MW,net)	HeatRate:	11,816 (Btu/kWh)
Primary/Secondary Fuel(type):	Illinois #6	Cost:	1.24 (\$/MMBtu)
Design/Construction:	4 (years)	BookLife:	20 (years)
TPC(Plant Cost) Year:	1999 (Dec.)	TPI Year:	2000 (Jan.)
Capacity Factor:	65 (%)	CO <sub>2</sub> Removed	2,022,574 (tons/year)

**CAPITAL INVESTMENT**

	<b>\$x1000</b>	<b>\$/kW</b>
Process Capital & Facilities	530,434	1610.8
Engineering(incl.C.M.,H.O.& Fee)	31,826	96.6
Process Contingency	6,022	18.3
Project Contingency	84,136	255.5
<b>TOTAL PLANT COST(TPC)</b>	<b>\$652,417</b>	<b>1981.3</b>
<b>TOTAL CASH EXPENDED</b>	<b>\$652,417</b>	
AFDC	\$52,929	
<b>TOTAL PLANT INVESTMENT(TPI)</b>	<b>\$705,346</b>	<b>2142.0</b>
Royalty Allowance		
Preproduction Costs	18,379	55.8
Inventory Capital	6,316	19.2
Initial Catalyst & Chemicals(w/equip.)		
Land Cost	544	1.7
<b>TOTAL CAPITAL REQUIREMENT(TCR)</b>	<b>\$730,585</b>	<b>2218.6</b>

**OPERATING & MAINTENANCE COSTS (1999 Dollars)**

	<b>\$x1000</b>	<b>\$/kW-yr</b>
Operating Labor	5,272	16.0
Maintenance Labor	3,490	10.6
Maintenance Material	5,235	15.9
Administrative & Support Labor	2,191	6.7
<b>TOTAL OPERATION &amp; MAINTENANCE</b>	<b>\$16,187</b>	<b>49.2</b>
<b>FIXED O &amp; M</b>		<b>33.26 \$/kW-yr</b>
<b>VARIABLE O &amp; M</b>		<b>0.28 ¢/kWh</b>

**CONSUMABLE OPERATING COSTS,less Fuel (1999 Dollars)**

	<b>\$x1000</b>	<b>¢/kWh</b>
Water	300	0.02
Chemicals	10,247	0.55
Other Consumables	2,073	0.11
Waste Disposal	3,315	0.18
<b>TOTAL CONSUMABLE OPERATING COSTS</b>	<b>\$15,936</b>	<b>0.85</b>

**BY-PRODUCT CREDITS (1999 Dollars)**

<b>FUEL COST (1999 Dollars)</b>	<b>\$27,472</b>	<b>1.47</b>
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**PRODUCTION COST SUMMARY**

	<b>Levelized (Over Book Life \$)</b>	
	<b>\$/ton CO<sub>2</sub></b>	<b>¢/kWh</b>
Fixed O & M	\$2.13	33.3/kW-yr
Variable O & M	\$1.20	0.28
Consumables	\$3.32	0.85
By-product Credit		
Fuel	\$3.90	1.47
<b>TOTAL PRODUCTION COST</b>	<b>\$10.55</b>	<b>3.18</b>

<b>LEVELIZED CARRYING CHARGES(Capital)</b>	<b>\$21.06</b>	<b>306.2/kW-yr</b>	<b>5.38</b>
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<b>LEVELIZED (Over Book Life) BUSBAR COST OF POWER</b>	<b>\$31.61</b>		<b>8.56</b>
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**ESTIMATE BASIS/FINANCIAL CRITERIA for REVENUE REQUIREMENT CALCULATIONS****GENERAL DATA/CHARACTERISTICS**

Case Title:	Super-Critical PC w/ CO <sub>2</sub>	
Unit Size:/Plant Size:	329.3 MW <sub>net</sub>	329.3 MWe
Location:	East-West Region	
Fuel: Primary/Secondary	Illinois #6	
Energy From Primary/Secondary Fuels	11,816 Btu/kWh	Btu/kWh
Levelized Capacity Factor / Preproduction(equivalent months)	65 %	1 months
Capital Cost Year Dollars (Reference Year Dollars):	1999 (December)	
Delivered Cost of Primary/Secondary Fuel	1.24 \$/MBtu	\$/MBtu
Design/Construction Period:	4 years	
Plant Startup Date (1st. Year Dollars):	2000 (January)	
Land Area/Unit Cost	340 acre	\$1,600 /acre

**FINANCIAL CRITERIA**

Project Book Life:	20 years	
Book Salvage Value:	%	
Project Tax Life:	20 years	
Tax Depreciation Method:	Accel. based on ACRS Class	
Property Tax Rate:	1.0 % per year	
Insurance Tax Rate:	1.0 % per year	
Federal Income Tax Rate:	34.0 %	
State Income Tax Rate:	4.2 %	
Investment Tax Credit/% Eligible	%	%
Economic Basis:	Over Book Lif Constant Dollars	
Capital Structure	<u>% of Total</u>	<u>Cost(%)</u>
Common Equity	45	12.00
Preferred Stock	10	8.50
Debt	45	9.00
Weighted Cost of Capital:(after tax)	8.76 %	
Escalation Rates	<u>Over Book Life</u>	<u>1999 to 2000</u>
General	% per year	% per year
Primary Fuel	% per year	% per year
Secondary Fuel	% per year	% per year

Client: Project:		EPRI/DOE VISION 21 INNOVATIVE POWER CYCLES		Report Date: 20-Sep-2000 07:19 AM								
Case: Plant Size:		Super-Critical PC w/ CO <sub>2</sub> 329.3 MW <sub>net</sub>		Estimate Type: Conceptual								
		TOTAL PLANT COST SUMMARY		Cost Base (Dec) 1999 (\$x1000)								
Acct No.	Item/Description	Equipment Cost	Material Cost	Labor Direct	Labor Indirect	Sales Tax	Bare Erected Cost \$	Eng'g CM H.O. & Fee	Contingencies Process	Contingencies Project	TOTAL PLANT COST \$	TOTAL PLANT COST \$/KW
1	COAL & SORBENT HANDLING	7,337	2,218	5,858	410		\$15,822	949		3,354	\$20,126	61
2	COAL & SORBENT PREP & FEED	9,199		3,000	210		\$12,409	745		2,631	\$15,784	48
3	FEEDWATER & MISC. BOP SYSTEMS	15,344		7,212	505		\$23,061	1,384		5,409	\$29,854	91
4	PC BOILER & ACCESSORIES	73,384		29,348	2,054		\$104,787	6,287		11,107	\$122,182	371
4.1	PC Boiler											
4.2	Open											
4.3	Open											
4.4-4.9	Boiler BoP (w/ID & ID Fans) SUBTOTAL 4	3,043 76,428		1,050 30,398	73 2,128		\$4,167 \$108,954	250 6,537		442 11,549	\$4,859 \$127,040	15 386
5A	FLUE GAS CLEANUP	36,577		21,339	1,494		\$59,410	3,565		6,297	\$69,272	210
5B	CO <sub>2</sub> REMOVAL & COMPRESSION	66,457		42,347	2,964		\$111,769	6,706	6,022	18,674	\$143,171	435
6	COMBUSTION TURBINE/ACCESSORIE	N/A		N/A								
6.1	Combustion Turbine Generator											
6.2-6.9	Combustion Turbine Accessories SUBTOTAL 6											
7	HRSG, DUCTING & STACK	N/A		N/A								
7.1	Heat Recovery Steam Generator											
7.2-7.9	HRSG Accessories, Ductwork and Stack SUBTOTAL 7	8,996 8,996	805 805	7,675 7,675	537 537		\$18,014 \$18,014	1,081 1,081		3,159 3,159	\$22,253 \$22,253	68 68
8	STEAM TURBINE GENERATOR											
8.1	Steam TG & Accessories	35,070		6,053	424		\$41,546	2,493		4,404	\$48,443	147
8.2-8.9	Turbine Plant Auxiliaries and Steam Piping SUBTOTAL 8	12,598 47,069	519 519	7,085 13,138	496 920		\$20,698 \$62,245	1,242 3,735		3,848 8,252	\$25,788 \$74,231	78 225
9	COOLING WATER SYSTEM	5,170	5,981	5,590	391		\$17,133	1,028		3,513	\$21,674	66
10	ASH/SPENT SORBENT HANDLING SYS	6,288	85	12,037	843		\$19,252	1,155		3,094	\$23,502	71
11	ACCESSORY ELECTRIC PLANT	11,924	4,462	13,977	978		\$31,341	1,880		5,396	\$38,618	117
12	INSTRUMENTATION & CONTROL	6,133		2,566	180		\$8,879	533		1,191	\$10,602	32
13	IMPROVEMENTS TO SITE	2,063	1,216	4,834	338		\$8,450	507		2,687	\$11,644	35
14	BUILDINGS & STRUCTURES		15,126	17,354	1,215		\$33,695	2,022		8,929	\$44,646	136
TOTAL COST		\$299,584	\$30,412	\$187,325	\$13,113		\$530,434	\$31,826	\$6,022	\$84,136	\$652,417	1981